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THE GARDEN CALENDAR.

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A radio talk by W. R. Beattie, Bureau of Plant Industry, delivered through WRC and 38 other radio stations associated with the National Broadcasting Company, October 21, 1930.

U.S. Department of Agriculture

How-do-you-do friends. Numerous reports have been received from fruit growers relative to losses of fruit trees and small fruits as a result of the drouth. I congratulate those of you who live in the sections where abundant rains have occurred for the drought has not been broken in the area around Washington and the loss of fruit and shade trees also of ornamental plantings where they are not being watered is going steadily on. Apple trees of bearing age in the Virginia apple section are reported as dying in many cases. These losses seem to be greatest on soils that are low in humus and which have been washed badly in years past. This condition is found mainly in orchards where clean culture has been practiced during the spring and early summer. Orchards that are in sod or those that are kept planted to a cover crop the greater part of the year are less subject to soil washing.

Orchards that are planted on steep hillsides are extremely subject to erosion and the loss of soil not only exposes the roots of the trees but removes the humus which is the sponge that retains the soil moisture. It naturally follows that fruit trees or small fruits growing on a badly leached and washed soil will suffer for want of moisture during a dry period, nor is that the whole story for the loss of plant food is another important factor and in my rounds I have not found many orchards where the soil was richer than is required for good tree growth.

Sod mulched orchards seldom wash to any degree but it is the exception that an orchard can be handled in sod from the start. There are a few very satisfactory apple orchards, especially in the New England States, which have never had a plow or cultivator used in them. On the whole the growing of fruit calls for cultivation and along with cultivation we have the hazard of soil erosion. Gullies form quickly on even slightly rolling lands subject to continuous clean cultivation, this is especially true where the soils are of fine texture and rather low humus content. Gullies, once formed, soon enlarge, lateral gullies form and sheet erosion completes the ruin of the soil. It is not too late in many fruit producing sections, especially in the Southern States, to plant rye or some crop to help hold the soil against the attacks of winter and early spring rains. In the south, where there is little or no snow and freezing, the soil is often gullied and swept away by the heavy winter rains, and a covering of rye or winter oats will help hold the soil.

The use of brush dams is an effective way of reclaiming gullies where the supply of brush is plentiful. The fall and early winter is a good time to haul the brush and build the dams in the gullies. Brush dams are easily constructed, requiring no particular skill except where the flow of water is heavy. Loose brush dams may be made by simply piling the brush compactly in the gully with the stem ends upstream. Where the height of the dam is more than 2 feet or the flow of water is heavy the dams should be anchored by means of stakes and wires. Where loose rock is available it can be used to anchor the brush, or rock dams, if well built are effective.

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Another good method of preventing the erosion of orchard lands is by contouring. The contours should, however, be built before the orchard is planted then arrange the rows of trees follow the contours rather than in straight lines. Where the orchard is already planted half-moons or eyebrows of soil may be constructed below each tree. Take a string about 18 feet in length, tie one end to the trunk of the tree and mark off a semi-circle below the tree then gradually build up the soil with rock or brush to hold it until a basin to catch the wash is formed.

The most difficult problem is where the trees have been mounded by plowing the soil toward them and they stand upon an elevation. Cover crops and the gradual building up of the soil below the trees is about the only method of handling a situation of this character. Extreme care during the first stages in the development of an orchard will greatly reduce the difficulties in later years and it's a lot easier to keep the soil in the orchard than to restore it after it has been largely washed away. I note that trees that are growing in good soil with plenty of humus have not suffered very greatly from drought this summer, and I believe that in the future fruits growers generally will pay more attention to the preparation of the land before planting either tree fruits or small fruits. In any event we can not afford to have the best of our soils washing down the streams.

If a thief were entering your orchard and stealing your choicest fruit you would soon adopt measures to catch him and put a stop to your losses but here is a thief that steals the very soil on which your orchard is growing, or trying to grow, and you doing very little about it. Orchardists have been advised to feed their trees, using Nitrates and highly available fertilizers for the purpose but unless you have soil in which the feeding roots can develop also sufficient moisture to act as a conveyor for the fertilizers you are not going to get results. I am reminded of the story of the man whose roof leaked and when asked why he did not fix it. In reply he said that when it was raining he could not fix it and when it was not raining he did not need to fix it. While the weather is dry it is a good time for the fruit grower to prepare for a downpour by planting orchard cover crops wherever possible, by building brush dams in the gullies, by terracing and by building halfmoons at the lower side of each tree. Stop the soil thief.